

REMARKS:

Claims 7-11 are in the case and presented for consideration.

Applicant thanks the examiner for the interviews conducted on May 4, 2004, May 5, 2004 and May 18, 2004.

The substance of the interview on May 4, 2004, continuing to May 5, 2004, was as follows.

The undersigned proposed an amendment to claim 7, adding the limitation that pressure relief is adiabatic. The undersigned referred to page 2, lines 5-15, page 3, lines 9-12, and page 3, lines 29-32 continuing to page 4, lines 1-3 for support from the specification for the proposed limitation. In particular, the undersigned noted that the specification discusses the fact that an intentional or an unintentional displacement of the screw or injection piston can modify the pressure pattern without affecting the volume of the antechamber, because the pressure is released adiabatically. The specification also discloses that such a displacement would occur after the opening of the shut-off means 2.

The undersigned pointed out that the '925 patent does not explicitly teach or suggest adiabatic relief of pressure.

The examiner indicated that she could not see any difference in operation or structure between the '925 reference and the proposed claim reciting an adiabatic relief of pressure. The examiner stated that she did not see any indication that the '925 apparatus lacked an adiabatic pressure relief.

The examiner acknowledged that pressure could be modified without any effect to the injection-molded article after the shut-off means 2 was opened under the adiabatic conditions, such as by movement of a screw.

The examiner acknowledged that the Bronnenkant '925 patent only teaches a single pressure expansion, without any further modifications. The examiner indicated that adiabatic relief of pressure would be a new issue.

The substance of the interview of May 18, 2004 is as follows.

The undersigned explained that the needle 9, lever 11, and hydraulic unit 12 of the claimed invention open and close the shut-off means 2 at different times after the initial release of the plastic material under pressure, whereas Bronnenkant '925 only provides a single instantaneous release via nozzle 63. Furthermore, the undersigned indicated that the needle 9, lever 11, and hydraulic unit 12 operated independently of the injection side, whereas the nozzle in Bronnenkant '925 did not.

The examiner equated the needle 9, lever 11 and hydraulic means 12 to an on/off switch. The examiner further stated that Bronnenkant '925 also teaches an on/off switch in the form of the nozzle 63. The examiner also indicated that the needle 9, lever 11, and hydraulic means 12 were not claimed and would be a new issue if included in amended claims.

Also, the examiner indicated that the applicant's specification does not specifically state that the needle 9, lever 11 and hydraulic means 12 could be used repeatedly (twice during each injection for example) to open and close the shut-off means 2.

Turning to the present Office action, claims 7, 9 and 10 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 3,052,925 to Bronnenkant et al. Applicant respectfully traverses the examiner's rejection for the following reasons.

Applicant has rewritten claim 7 for clarification of the claimed elements and limitations. In particular, the phrase "in a controlled manner" has been changed to "by a

control means." Claim 7 now recites that "the shut-off means is opened and closed by a control means for directly modifying a pressure pattern in the mold cavity." The change in the claim is only a clarification, and thus should not raise any new issues since the phrase "in a controlled manner" suggests or requires a control means.

The use of the phrase "modifying a pressure pattern" suggests opening and closing of the shut-off means subsequent in time to the initial release of the plastic material under pressure, since the pressure pattern can only be modified if the shut-off means is reopened again. Thus, modification of a pressure pattern suggests opening and closing at different times (e.g, twice during each injection). The examiner indicated during the interview of May 18, 2004 that such a feature was not supported by the specification, and thus was believed to be new matter. Applicant respectfully disagrees since the specification clearly discloses modifying a pressure pattern on page 3, line 10, and it is inherent that modification of a pressure pattern would require reopening of the shut-off means.

Thus, Bronnenkant '925 fails to teach or suggest at least one limitation recited in independent claim 7. Bronnekannt '925 teaches only a single instantaneous release by the nozzle 63, as acknowledged by the examiner. Bronnekannt '925 fails to teach that "the shut-off means is opened and closed by a control means for directly modifying a pressure pattern in the mold cavity." That is, Bronnenkant '925 fails to teach or suggest any means that permits the nozzle 63 to be opened more than one time to modify the pressure pattern in the cavity.

Furthermore, "a control means for directly modifying a pressure pattern", as claimed, is not taught by Bronnenkant '925. The examiner has explained that "the filling of the mold cavity causes the pressure to change in the cavity and this modify a

pressure pattern in the mold cavity." By contrast, the claims recite that modification of the pressure pattern is directly attributable to the control means rather than to the effect of the filling of the mold cavity.

Claims 7, 9, and 10 were rejected under 35 U.S.C. 103(a) as being obvious from Bronnekant '925. The examiner issued this rejection based on a lack of understanding of the claims, and in particular, with respect to the modification of the pressure pattern. Applicant believes that the amendment to the claims has clarified the recited elements and limitations, and thus, the basis for the examiner's rejection is no longer relevant as claim 7 now recites "a control means for directly modifying a pressure pattern."


Claims 8 and 11 were rejected under 35 U.S.C. 103(a) as being obvious from Bronnenkant '925 in view of U.S. Patent 6,322,347 to Xu alone, or alternatively taken together with U.S. Patent 4,266,928 to Weidner et al. Xu '347 and Weidner '928 are only cited for their teachings of high pressure in injection molding applications. Thus, applicant submits that claims 8 and 11 are nonobvious for the same reasons as stated above in the response to the §102 and §103 rejections based on Bronnekant '925 alone.

Accordingly, the application and claims are believed to be in condition for allowance, and favorable action is respectfully requested. No new matter has been added.

If any issues remain which may be resolved by telephonic communication, the Examiner is respectfully invited to contact the undersigned at the number below, if such will advance the application to allowance.

Favorable action is respectfully requested.

Respectfully submitted,


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